Amendments to the Specification:

Please change the title to read as follows:

Scheduling Parallel Services Using Data Flow Analysis.

Please replace paragraph [0014] with the following amended paragraph:

[0014] In packet-switching networks (as opposed to circuit-switching networks), data 12 is transported in the form of packets $46_{1\text{-}N}$ of various sizes. As packets ~~45~~$46_{1\text{-}N}$ are received by network interface device 20, individual data packets are temporarily stored until the packets can be processed by the network processor 18.

Please replace paragraph [0041] with the following amended paragraph:

[0041] Continuing with the above-stated example, assume that it takes (on average) 300 nanoseconds for service s3 to encrypt and compress a packet, while it only takes (on average) 50 nanoseconds for service s4 to compress an already encrypted packet. If the packets are distributed based solely on the element ratio defined above (e.g., three packets to service s3 for each two packets for service s4), it would take 900 ~~milliseconds~~ nanoseconds for service s3 to process three packets, and only 100 ~~milliseconds~~ nanoseconds for service s4 to process two packets. Accordingly, 90% of the processing time of packet engine pe3 (e.g., the packet engine servicing services s3 and s4) is used by service s3 and only 10% of the processing time of packet engine pe3 is used by service s4.